

**CLAIMS**

- 1 Filler-containing foams obtainable by reacting
- (I) polyfunctional isocyanates and
- 5 (II) mixtures of
- a) carboxylic acids and/or hydroxycarboxylic acids and optionally
- b) alcohols and/or primary and/or secondary amines,
- at least a) or b) having to be polyfunctional and/or a) and/or b) being
- combined to form a hydroxycarboxylic acid or aminocarboxylic acid
- 10 and
- c) filler mixtures, the filler mixtures containing
- c-1) inorganic, high temperature resistant fillers,
- c-2) micropore-forming, high temperature resistant fillers,
- c-3) heat-activatable swelling agents.
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2. Foams as claimed in claim 1, characterized in that component (I) and/or (II) contain(s) catalysts and/or foam stabilizers and/or liquid flame retardants and/or silicon dioxides as further constituents.
3. Foams as claimed in claims 1 and 2, characterized in that component (II) contains water as a further constituent.
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4. Foams as claimed in claims 1 to 3, characterized in that the filler mixture (c) contains adhesives and/or grinding aids and/or anticaking agents as further constituents.
5. Foams as claimed in claims 1 to 4, characterized in that the poly-
- 25 functional isocyanates (I) are selected from the group consisting of aliphatic, cycloaliphatic and aromatic polyfunctional isocyanates and oligomerized NCO-containing products produced therefrom.
6. Foams as claimed in claims 1 to 5, characterized in that polyhydroxypolycarboxylic acids are used as the carboxylic acids.
- 30 7. Foams as claimed in claims 1 to 6, characterized in that polyester

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polyols and/or polyether polyols are used as the alcohols.

8. Foams as claimed in claims 1 to 7, characterized in that the inorganic, high temperature resistant fillers (c-1) are selected from the group consisting of calcium carbonate, calcium sulfate, clay, aluminium oxide, magnesium oxide and aluminium silicates.

9. Foams as claimed in claims 1 to 8, characterized in that the inorganic, high temperature resistant fillers (c-1) have a mean particle size of 1 to 20  $\mu\text{m}$ .

10. Foams as claimed in claims 1 to 9, characterized in that the micropore-forming, high temperature resistant fillers (c-2) are selected from the group consisting of expanded perlite, expanded vermiculite, expanded clay, expanded graphite, hollow aluminium silicate beads, hollow glass beads, hollow fly-ash beads, cellular concrete and expanded waterglass.

11. Foams as claimed in claims 1 to 10, characterized in that the filler is a mixture of solids consisting of

20 to 90% by weight of inorganic, high temperature resistant fillers (c-1),

1 to 30% by weight of heat-activatable swelling agents (c-3),

0.1 to 35% by weight of adhesives,

20 2 to 40% by weight of micropore-forming, high temperature resistant fillers (c-2) and

0.01 to 10% by weight of grinding aids and/or anticaking agents,

with the proviso that the quantities shown add up to 100% by weight.

12. A process for the production of filler-containing foams, characterized in that, starting from

(I) polyfunctional isocyanates and

(II) mixtures of

a) carboxylic acids and optionally

30 b) alcohols and/or primary and/or secondary amines,

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at least a) or b) having to be polyfunctional and/or a) and/or b) being combined to form a hydroxycarboxylic acid or aminocarboxylic acid and

c) filler mixtures, the filler mixtures containing

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c-1) inorganic, high temperature resistant fillers,

c-2) micropore-forming, high temperature resistant fillers,

c-3) heat-activatable swelling agents,

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components (I) and (II) are placed in separate compartments and are foamed by mixing.

13. A process as claimed in claim 12, characterized in that components (I) and (II) are placed in a cartridge system.

14. A process as claimed in claims 11 to 13, characterized in that components (I) and (II) are used in a ratio by volume of 1:2 to 2:1.

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15. A process as claimed in claims 11 to 14, characterized in that components (I) and (II) are used in a ratio by volume of 1:1.

16. A process as claimed in claims 11 to 15, characterized in that it is carried out at a temperature of 0 to 40°C.

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17. The use of the foams claimed in claims 1 to 16 as flame-retardant foams.

18. The use of the foams claimed in claims 1 to 16 as insulating foams.

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